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EXAMINER  
CUNNINGHAM, T

B5M2/0405

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ART UNIT	PAPER NUMBER
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2504

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DATE MAILED: 04/05/96

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined. ☒ Responsive to communication filed on 02/02/96 ☒ This action is made final.  
A shortened statutory period for response to this action is set to expire THREE (3) month(s), — days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                   |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.             | 4. <input type="checkbox"/> Notice of informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____  |

**Part II SUMMARY OF ACTION**

1. ☒ Claim(s) 1-5 and 7 are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is withdrawn from consideration.
2. ☐ Claim(s) \_\_\_\_\_ has been canceled.
3. ☐ Claim(s) \_\_\_\_\_ is allowed.
4. ☒ Claim(s) 1-5 and 7 are rejected.
5. ☐ Claim(s) \_\_\_\_\_ is objected to.
6. ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawing(s) under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawing(s) are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☒ The proposed drawing correction(s), filed on 09/29/95, has been ☒ approved. ☐ disapproved (see explanation).
12. ☒ Acknowledgment is made of the claim for priority under 35 USC 119. The certified copy has ☐ been received ☐ not been received  
☒ been filed in parent application, serial no. 08/376,347; filed on 01/23/95.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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It is noted that the amendment to page 6, line 19, was not entered because there is no occurrence of "generated" therein. It appears that this should have referred to line 18. Similarly, the amendment to page 7, line 25, was not entered because there is no occurrence of "substrate" therein. It appears that this should have referred to line 24.

The disclosure is objected to because with the present language on page 6, "invention is that" in line 17 should be deleted, else the sentence begins with a non-capitalized word and a capitalized "A" exists therein.. Appropriate correction is required.

Claims 1-5 and 7 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 11, it is not understood how the "first MOS transistor" can have "a channel connected" anywhere, since, it is notoriously well known that enhancement mode transistors (being the type of MOS disclosed) do not have a channel. Therefore, it is suggested that "channel" be changed to --current path--. Similar problems exist in line 15. In line 13, there is no support in the specification for the language reciting that the "first MOS transistor" operates "in response to a level of said substrate voltage". It appears that this refers to either 36 or 40 of Fig. 3, however, neither of these elements operate responsive to the "substrate voltage".

In claim 2, line 26, "an output signal of said substrate voltage level detector" has already been recited in line 23. Thus, it appears that "an" should be changed to --said--.

In claim 3, line 3, it is not understood what is meant by "an input of said chip enable signal signal". It appears that "of" should be changed to --receiving--. Alternately, "an input" in line 3 could be changed to --input thereto-- and "having input thereto" in line 4 be deleted. In line 5, it is not understood how the "NOR circuit" can receive " an inversion of said self refresh enable signal" since no element has been recited to provide such operation. Clearly, this is an example of

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"functional language not supported by recitation in the claim of sufficient structure to warrant the presence of the functional language of the claim", as discussed in M.P.E.P. § 706.03(c).

Claim 4, line 29, has similar indefiniteness as claim 1 concerning the "channel" of the "MOS transistor".

Claim 5 is rejected for the reasons discussed above with claim 4.

Claim 7 is rejected for similar reasons as claim 3.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person."

Claims 1, 4 and 5 are rejected under 35 U.S.C. § 103 as being unpatentable over Sugibayashi et al.

With respect to claims 1 and 4, the reference to Sugibayashi et al. disclose, in Fig. 6, a circuit similar to that recited, but does not disclose specific details disclosed for the comparator 13i. However, Fig. 11 discloses another "voltage monitoring circuit" showing the details of the comparator 23. The reference to Sugibayashi et al. does not specifically disclose using the comparator of the "voltage monitoring circuit" of Fig. 1 in the "voltage monitoring circuit" of Fig. 6. However, it is clear that the structure for the comparator in Fig. 11 is merely well-known conventional structure and could be used for the comparator of Fig. 6. Such structure is well known to have simple construction and due to the mirror circuit, such will have the same current

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in both paths. Therefore, it would have been obvious for one skilled in the art to use the specific comparator of Fig. 11 for the broad comparator of Fig. 6 to obtain the expected advantages therewith.

This modification would provide a circuit comprising: "a voltage pump circuit (13k of Fig. 9)"; "an oscillator (13j of Fig. 9)"; "a substrate voltage detector (13g of Fig. 6)" having "a first MOS transistor (23d)...connected to a power supply (PW1)" and "a second MOS transistor (23e) [connected]...to ground"; and "a controller (rest of Fig. 6)" responsive to "a chip enable signal (Vref) and "a self refresh mod enable signal (PONA)", all connected and operating similarly as recited by Applicant.

With respect to claim 5, Fig. 6 clearly discloses an inverter IV1 connected to the output of the "NOR circuit". It is notoriously well known that an inverter can be constructed utilizing an "AND circuit". Therefore, it would have been obvious for one skilled in the art to construct inverter IV1 utilizing an "AND circuit".

Claims 2 and 3 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. § 112.

Claim 7 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112 and to include all of the limitations of the base claim and any intervening claims.

This is a Continuation of applicant's earlier application S.N. 08/376,347. All rejected claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds or art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL**, even though it is a first action in this case. See M.P.E.P. § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

**A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE**


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EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terry Cunningham at telephone number (703) 308-4872. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

The fax phone number for Art Unit 2504 is (703) 308-7722. Please note, any faxed paper clearly stating **DRAFT** or **PROPOSED AMENDMENT** at the top will be forwarded directly to the Examiner. All others will be treated as a formal response and acted upon accordingly.

TC  
April 3, 1996

  
Terry D. Cunningham  
Primary Examiner  
Group Art Unit 2504